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## ***Hurricane coverage:***

### **1 — Explosions reported at flooded Crosby chemical plant, Houston Chronicle, 8/31/2017**

<http://www.houstonchronicle.com/news/houston-texas/texas/article/BREAKING-Reports-of-explosion-at-flooded-Crosby-12163386.php>

A fire broke out at the Arkema plant in Crosby early Thursday, following chemical explosions overnight that sent plumes of black smoke into the air.

### **2 — Public health threat from Hurricane Harvey just beginning, Houston Chronicle, 8/30/2017**

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From the bacteria, viruses, and fungi harbored in floodwaters to new breeding grounds for disease-carrying mosquitoes to a potentially staggering mental health toll inflicted on those hardest hit by Harvey, the risks are expected to be great.

### **3 — Dozens of refinery leaks reported; more toxic spills likely, E&E News, 8/30/2017**

<https://www.eenews.net/stories/1060059445>

Tropical Storm Harvey has already caused dozens of spills at refineries and chemical plants along the Gulf Coast and could threaten the integrity of toxic waste sites.

### **4 — As Houston Looks to Recover, Small Towns Now Bear the Brunt, The New York Times, 8/30/2017**

<https://www.nytimes.com/2017/08/30/us/small-towns-harvey.html?mcubz=0>

As Houston began gingerly to assess the devastation, the storm marched on to conquer a vast new swath speckled with small towns that are home to millions of people who were shocked anew by Harvey's tenaciously destructive power. Officials faced a population in dire need, but far more difficult to reach.

### **5 — Beaumont could be without water for days, Beaumont Enterprise, 8/31/2017**

<http://www.beaumontenterprise.com/news/article/Beaumont-could-be-without-water-for-days-12163451.php>

Beaumont is without a water supply after floodwaters knocked out the city's main pump station near the Neches River before 12:30 a.m. Thursday, Beaumont Fire Capt. Brad Penisson wrote on the city's website. The city of 120,000 also lost its secondary water source in Hardin County.

### **6 — East Texas county tells residents 'GET OUT OR DIE!', Houston Chronicle, 8/30/2017**

<http://www.chron.com/news/houston-weather/hurricaneharvey/article/East-Texas-county-tells-residents-GET-OUT-OR-12162456.php>

Emergency Management officials in Tyler County in East Texas posted a harrowing Facebook message Wednesday evening warning residents of imminent and deadly flooding.

**7— A Sea of Health and Environmental Hazards in Houston's Floodwaters, The New York Times, 8/31/17**

<https://www.nytimes.com/2017/08/31/us/houston-contaminated-floodwaters.html>

Officials in Houston are just beginning to grapple with the health and environmental risks that lurk in the waters dumped by Hurricane Harvey, a stew of toxic chemicals, sewage, debris and waste that still floods much of the city.

**8— The myth of the 100-year flood, E&E News, 8/30/17**

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Federal policies are built around the so-called 100-year floodplain, which is commonly and incorrectly understood as an area that would flood once every century. But it really means there's a 1 percent chance of flooding in any given year or that there's a 26 percent chance of being flooded at least once during a 30-year mortgage period, according to the Federal Emergency Management Agency.

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You may have to look a bit harder than normal in some places where there are shortages and occasional long lines for gasoline.

**10 — Perry taps federal oil reserve, San Antonio Express-News, 8/31/17**

<http://www.mysanantonio.com/business/energy/article/Perry-taps-federal-oil-reserve-12163683.php>

Energy Secretary Rick Perry on Thursday tapped the federal Strategic Petroleum Reserve to offset fuel shortages in the aftermath of Hurricane Harvey.

**11 — Harvey's winds and rain disrupt Texas agriculture, Texas Tribune, 8/30/17**

<https://www.texastribune.org/2017/08/30/harveys-winds-and-rain-disrupt-texas-agriculture/>

Hurricane Harvey did more than transform cityscape by turning highways into rivers; it also upended life for farmers and ranchers across dozens of counties that Gov. Greg Abbott declared disaster zones.

**12 — Tropical Storm Irma forms in Atlantic, and we're still watching Gulf of Mexico early next week, San Antonio Express-News, 8/30/17**

<http://www.mysanantonio.com/news/article/Tropical-Storm-Irma-forms-in-Atlantic-and-we-re-12161180.php?ipid=brkbar>

A tropical system that could form in the western Gulf of Mexico near Louisiana and Texas early next week bears watching.

***Other news:***

**13 — 'Clean energy' petition targets pollution in New Mexico, Albuquerque Journal, 8/30/17**

<http://www.yesmagazine.org/issues/just-transition/tribes-were-the-first-climate-refugees-and-the-first-to-build-resilience-plans-20170830>

The New Mexico Attorney General's Office and consumer advocates are petitioning state regulators to consider a new energy standard they say would protect utility customers and shareholders from the costs and risks associated with future environmental regulations.

**14 — As Hurricanes Bear Down, Tribes Act Quickly to Build Resilience Plans, Yes Magazine, 8/30/17**

<http://www.yesmagazine.org/issues/just-transition/tribes-were-the-first-climate-refugees-and-the-first-to-build-resilience-plans-20170830>

Chief Albert Naquin was astounded when emergency officials warned him in September 2005 that a second hurricane would soon hammer the southern Louisiana bayous where Hurricane Katrina had struck less than a month earlier. The leader of the Biloxi-Chitimacha-Choctaw tribe, Naquin took to the Isle de Jean Charles' lone road to urge residents who had returned home after Katrina to leave their listing, moldy homes once again.

**15 — Harvey jog to largely spare Little Rock; storm's trek now to drench state's southeast, Arkansas Democrat-Gazette, 8/31/17**

<http://www.arkansasonline.com/news/2017/aug/31/harvey-jog-to-spare-lr-20170831/>

The remnants of Hurricane Harvey, which devastated the Texas Gulf Coast and set record rainfall totals in that state this week, turned northeast Wednesday on a trek that's farther east than first expected.

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A tropical system that could form in the western Gulf of Mexico near Louisiana and Texas early next week bears watching.

**13 — Crude slips, gasoline jumps as storm shuts a fifth of U.S. fuel output, Reuters, 8/29/17**

<https://in.reuters.com/article/us-global-oil-idINKCN1BA07E>

Refineries with output of 4.1 million barrels per day (bpd) were offline on Tuesday, representing 23 percent of U.S. production, Goldman Sachs said. Restarting plants even under the best conditions can take a week or more.

**14 — The Looming Consequences of Breathing Mold, The Atlantic, 8/30/17**

<https://www.theatlantic.com/health/archive/2017/08/mold-city/538224/>

The flooding of Houston is a health catastrophe unfolding publicly in slow motion. The impact of hurricanes on health is not captured in the mortality and morbidity numbers in the days after the rain. This is typified by the inglorious problem of mold.

**15 — A battered, isolated Port Aransas picks itself up, San Antonio Express-News, 8/30/17**

<http://www.mysanantonio.com/news/local/article/Port-Aransas-now-open-for-cleanup-takes-stock-12159268.php>

This beach island community lay prostrate Tuesday — no internet or phone service, no running water or electricity and a dawn-to-dusk curfew. Days after Hurricane Harvey lashed the Coastal Bend with winds nearing 130 mph, Aransas Pass residents labored under a frontier isolation, knowing next to nothing about the fate of others down the road or across Redfish Bay.

***Other news:***

**16 — This miracle weed killer was supposed to save farms. Instead, it's devastating them., Washington Post, 8/29/17**

<http://wapo.st/2wSqFHZ>

Clay Mayes slams on the brakes of his Chevy Silverado and jumps out with the engine running, yelling at a dogwood by the side of the dirt road as if it had said something insulting. Its leaves curl downward and in on themselves like tiny, broken umbrellas. It's the telltale mark of inadvertent exposure to a controversial herbicide called dicamba.

**17 — Louisiana fights the sea, and loses, The Economist, 8/29/17**

<https://www.economist.com/news/united-states/21727099-has-lessons-americas-climate-change-policy-louisiana-fights-sea-and-loses>

Coastal erosion is one of America's biggest environmental crises. Louisiana contains some of the world's most extensive wetlands, home to a fifth of North America's waterfowl. It is an economic and human disaster, too. The threatened coastal area is home to 2m people and a hub of the oil-and-gas industry.

**18 — Safer approach detailed to reduce nitrogen in plant discharge, Ruidoso (NM) News, 8/29/17**

<http://www.ruidosonews.com/story/news/local/community/2017/08/29/safer-approach-detailed-reduce-nitrogen-plant-discharge/613749001/>

In a continuing effort to improve safety while attempting to meet new stringent federal and state nitrogen standards imposed on the discharge into the Rio Ruidoso of the Regional Wastewater Treatment Plant, operators of the Ruidoso facility are switching to a new carbon source.

**19 — Louisiana coast's insect invader has no taste for sugar cane, New Orleans Times-Picayune, 8/30/17**

[http://www.nola.com/environment/index.ssf/2017/08/insect-invaders-in-south-louis.html#incart\\_river\\_index](http://www.nola.com/environment/index.ssf/2017/08/insect-invaders-in-south-louis.html#incart_river_index)

The plague of insects decimating roseau cane marshes in coastal Louisiana might not be a threat after all to roseau's cash-crop cousin.

# Explosions reported at flooded Crosby chemical plant

By Keri Blakinger, Matt Dempsey, Andrew Kragie, and Margaret Kadifa |

August 31, 2017 | Updated: August 31, 2017 8:31am

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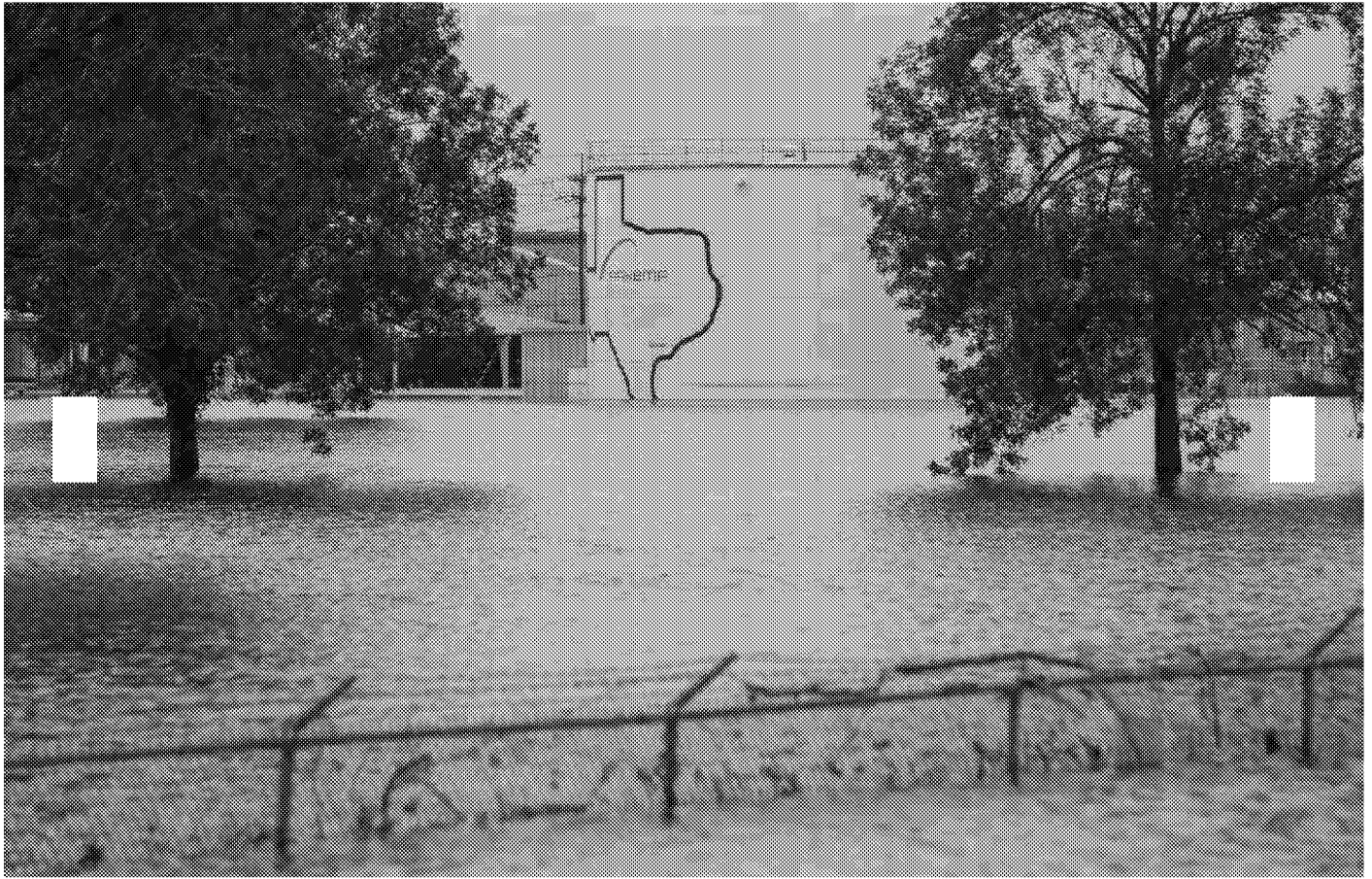


Photo: Godofredo A. Vasquez, Houston Chronicle

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**IMAGE 1 OF 129**

The Arkema chemical plant is flooded from Tropical Storm Harvey Wednesday, Aug. 30, 2017, in Crosby, Texas. Floodwaters from Harvey have knocked out power and generators that keep volatile organic peroxides

... more

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A fire broke out at the Arkema plant in Crosby early Thursday, following chemical explosions overnight that sent plumes of black smoke into the air.

Arkema officials warned that more explosions should be expected because there are eight additional containers of the same product at the plant, which is 25 miles northeast of downtown Houston.

**THE LATEST:** Get rolling updates, newest photos on Harvey here

Nearby residents should stay inside, turn off their air conditioning and close their windows and doors.

"You shouldn't be here, but if you haven't left, shelter in place," Arkema spokesman Jeff Carr said. "That's our advice."

#### Fire Burns at Houston Chemical Plant

A Houston-area chemical plant that lost power after Harvey engulfed the area in extensive flo...



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A Houston-area chemical plant that lost power after Harvey engulfed the area in extensive floods was rocked by two explosions early Thursday, the plant's operator said. (Aug. 31)

Media: Associated Press

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Crosby officials had been bracing for days for explosions at the Arkema plant where floodwaters knocked out power and generators needed to keep chemicals stored at the facility cool.

All employees at the plant had been evacuated already late Tuesday, as were residents from about 300 nearby homes. The Federal Aviation Administration barred flights over the area.

The chemicals at risk, organic peroxides, are stored in nine 18-wheeler box vans with 36,000 pounds each.

Arkema initially reported two of the vans exploded, but Assistant Chief Bob Royall with the Harris County Fire Marshall clarified Wednesday morning that there were multiple explosions in just one of the vans that held multiple 15-pound cardboard containers of the chemicals inside.

### **READ ALSO: Politico blasted for cartoon that critics say mocks Harvey victims**

Eight of the vans had lost power by Wednesday morning, Carr said. Three of them were no longer cooling.

But, Carr added, "We're going to lose them all."

The Harris County Fire Marshall is not monitoring any other chemical plants in the area, Royall said.

Just after 8 a.m. on Thursday, Frances Breaux, a family friend of a couple who live within the evacuation area, showed up the neighborhood. She had called her friends - both of whom are in the 70s - and hadn't heard back, Breaux said.

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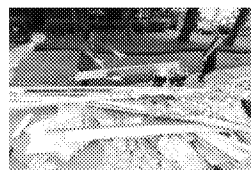
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"I keep trying to call them and I can't reach them," Breaux said.

The pair - Leo and Lajayne Opelia - messaged her last night, saying, "They are going to stay and ride it out," Breaux added. "And if they didn't make it, they loved us."

Citing safety concerns, deputies didn't allow Breaux in the neighborhood.

"You know how older people are," she said. "They just don't want to leave their place."

The explosions started about 1 a.m., causing flames and 40 feet of gray smoke that later turned black, Royall said.

Arkema has not been characterizing the combustions as explosions, calling it "an overpressurization that was followed by a fire," Carr said.

Carr said it would not be inaccurate to call the morning's events explosions.

The company said it had agreed with local authorities that, because of the volatile chemicals involved, "the best course of action is to let the fire burn itself out."

"They will burn with intensity until the fuel is consumed and then they will die down," Royall said.

Within two hours of the explosions, sheriff's deputies were dispatched to block off roads in the area and a stream of fire trucks headed to the scene. Highway 90 was blocked in both directions

at Crosby Eastgate, according to Houston TranStar's traffic map. The plant sits just 1,000 feet or so from the highway.

A total of 15 deputies with the Harris County Sheriff's Office were taken to the hospital after inhaling the fumes and getting smoke in their eyes. At least nine of them drove themselves as a precaution, said Jason Spencer, a spokesman for the Harris County Sheriff's Office.

Spencer said the deputies had been dispatched to keep people from getting too close to the plant. An injured deputy had respiratory problems after driving through a plume of smoke. However, the sheriff's office tweeted that Arkema said the smoke the deputies inhaled was "a non-toxic irritant."

By 7:15 a.m., eight of the deputies had been released, the sheriff's office tweeted. Seven were still being evaluated.

"What we were told is that the fumes from this chemical were not life-threatening," Spencer said. "I don't think any of our deputies are in a life-threatening situation."

Spencer added all of the information the sheriff's office had about the the toxicity of the chemical was from Arkema.

Gonzalez said nearby residents should shelter in place at home. He said authorities would tell local residents if a wider evacuation zone was needed. Gonzalez arrived on the scene Thursday morning.



**'NO WAY TO PREVENT': Read Wednesday's update on the chemical plant's risk**

A spokeswoman for the county fire marshal's office warned that it's not clear whether all residents had followed the evacuation order given for the area with 1.5 miles of the plant.

Harris County Fire Marshall spokeswoman Rachel Moreno said the office heard that a woman may still be in the evacuation zone, though that was not confirmed. Carr, the company spokesman, said he didn't know if all residents had evacuated.

The National Weather Service reported that winds in that area were moving to the east at 4 to 9 mph as of 4:30 a.m.

At least one family not far outside the 1.5-mile zone was left worried.

"But homes 2 miles away are safe?" questioned Alicia Garcia, who had recently returned to the family's home about four miles away after evacuating Sunday because of flooding.

### **'IT'S TERRIFYING': Family returns to flooded home, finds new danger nearby**

The Arkema facility was among the Houston-area sites with the highest potential for harm in an incident, according to a 2016 analysis by the O'Connor Process Safety Center and the Houston Chronicle. That analysis factored risks based on the amount and type of dangerous chemicals on site and their proximity to the public.

The volatile chemicals involved in the reaction are organic peroxides, according the company, which can become flammable at warm temperatures.

At a press news conference Wednesday, Rich Rowe, Arkema's CEO, said that if the volatile organic peroxides stored at the plant get too warm, some sort of explosion will happen.

"There is no way to prevent an explosion or fire," Rowe said. He refused to release the company's federally mandated risk management plan or its chemical inventory to reporters.

He downplayed any long-term impact or any toxic inhalation hazards from a fire or explosion at the plant, saying he was not aware of anything the public should be concerned about.

A statement on the company's web site from Wednesday says "At Crosby, we prepared for what we recognized could be a worst-case scenario. We had redundant contingency plans in place. Right now, we have an unprecedented 6 feet of water at the plant. We have lost primary power and two sources of emergency backup power. As a result, we have lost critical refrigeration of the materials on site that could now explode and cause a subsequent intense fire. The high water and lack of power leave us with no way to prevent it."

He added that the company is bringing air-quality monitoring equipment to the site Thursday morning.

"This site has an outstanding individual safety record, and they're determined not to screw it up today," he said.

***CHEMICAL BREAKDOWN:*** *In November 2014, four workers died at a DuPont plant in La Porte after being exposed to a toxic gas. Responding emergency workers weren't sure what was in the air. The surrounding community wasn't, either. A Houston Chronicle investigation dives deep into Houston's hidden world of explosions and toxic releases and probes the regulatory failures that put us in jeopardy. [Click here to read our series.](#)*

**Keri Blakinger**

Reporter

**Margaret Kadifa**

Reporter

**Matt Dempsey**

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Reporter

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# Public health threat from Hurricane Harvey just beginning

By Todd Ackerman | August 30, 2017

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More than 30 people are dead in the wake of Harvey, but the longest lasting impact of the hurricane turned tropical storm is just beginning: the public health threat.

From the bacteria, viruses, and fungi harbored in floodwaters to new breeding grounds for disease-carrying mosquitoes to a potentially staggering mental health toll inflicted on those hardest hit by Harvey, the risks are expected to be great.

To get a better sense of the public health problems that may lie ahead, the Chronicle interviewed a number of public health experts. Here's what we learned:

Do you need a tetanus shot if you spent any time in floodwaters?

You only need a tetanus shot – ASAP – if you exposed an open wound to floodwaters. Of course, unless you've had a tetanus shot in the last 10 years, you probably need a booster shot, but there's no rush, particularly given the stresses Harvey will put on the health-care system.

Ok, but aren't there serious infections lurking in those waters?

Yes, there are quite a few, of which the most dangerous is vibrio vulnificus, the so-called flesh-eating bacteria. New Orleans reported more than 20 cases after Katrina – it has five or six in a typical year – and Dr. A. Scott Lea, an infectious disease professor at the University of Texas Medical Branch at Galveston, said he expects the Houston area will see some post-Harvey cases, though likely more along the Gulf Coast than in Houston.

Temple says to get to a physician or emergency room within 24 hours if you suspect you have the potentially life-threatening infection, which is characterized by terrible pain and large blisters.

Is the water safe?

Mayor Sylvester Turner and the Houston health department say the water is safe but Lea says people in smaller communities with different water supplies should be careful, that it's not known if they were breached. He suggests people in such communities drink boiled or bottled water to be safe.

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#### TRANSLATOR

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When do the mosquitoes come?

Baylor College of Medicine tropical medicine specialist says the floodwaters likely swept away many breeding sites and should cause a decrease in mosquito activity in the short run. But he says there likely will be a sharp increase after floodwaters recede and new breeding sites pop up. He said it's possible the spike might be reflected next year too, given there's only another 1 1/2 months in Houston's mosquito season. There was such a year-after spike in New Orleans following Katrina.

What are the health concerns in crowded public shelters?

Fortunately, it's not close to flu season, so tuberculosis is the probably the biggest potential concern, said Hotez. The disease, which still occurs in Houston, is spread from person to person through the air, typically by coughing.

What are public health threats you might not expect? Injuries. Conventional wisdom might suggest that most injuries are sustained during the event itself, but post-disaster studies show that most occur in the weeks after the event. In the month following Katrina, for instance, Louisiana's health department found that 27 percent of New Orleans' 75,000 health problems involved injuries.

What are some examples? Back injuries from lifting heavy, wet items, such as mattresses or sofas. Carbon monoxide poisoning from running portable generators in the house. Electrocution from plugging into outlets before they've been evaluated by an electrician. Punctures wounds. Animal bites. Heat stress.

"People want to get home and restore their lives," said Robert Emery, vice president for safety at UT Health Science Center at Houston. "That zeal is where they get injured. Pause and make sure you're within your capabilities, thinking things through."

What are the signs you or your loved one might benefit from psychiatric help?

Most people affected by Harvey flooding will experience some sort of distress, which is normal and expected, said Dr. Jeff Temple, a UTMB psychologist. But those who worry excessively, experience difficulty sleeping or loss of appetite, develop rapid heart rates or sweating are at risk of Post Traumatic Stress Disorder and should seek help, said Temple.

He said the risk is greatest among those who've experienced prior trauma, lack social support and were hardest hit – they had to be evacuated, witnessed tragedy or feared for their life. Studies show PTSD occurs in about 20 percent of people affected by natural disasters, said Temple.



**Todd Ackerman**

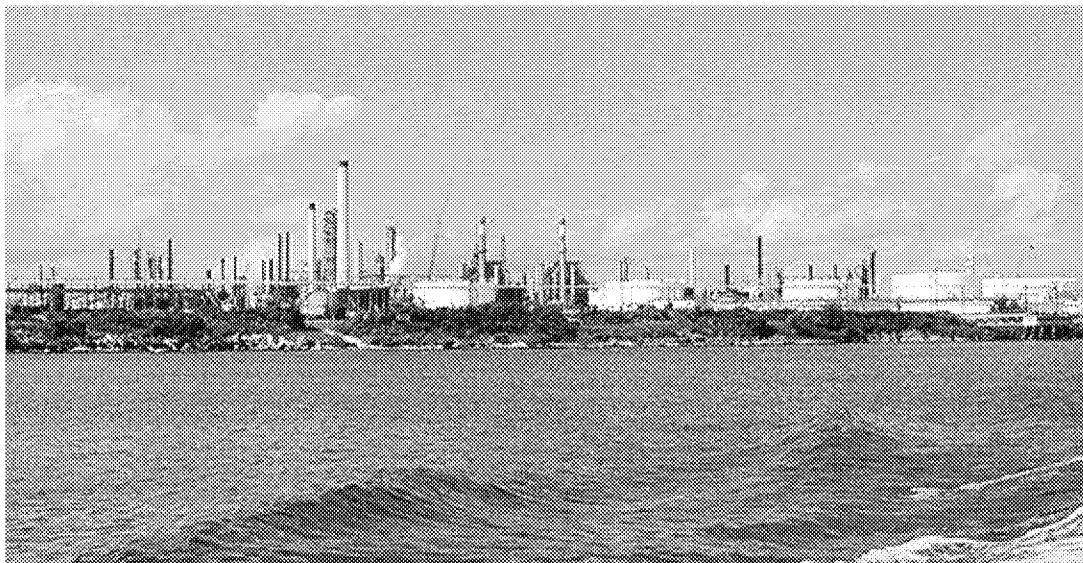
Medical Reporter,  
Houston Chronicle

## TROPICAL STORM HARVEY

### Dozens of refinery leaks reported; more toxic spills likely

Mike Lee, Corbin Hiar and Hannah Northey, E&E News reporters

Greenwire: Wednesday, August 30, 2017



Refinery leaks are likely due to severe flooding in Texas. Roger W/Flickr

Tropical Storm Harvey has already caused dozens of spills at refineries and chemical plants along the Gulf Coast and could threaten the integrity of toxic waste sites.

While it could be months before the full environmental impact of the storm — including sewage overflows, leaking underground tanks, and seepage from thousands of submerged homes and cars — becomes clear, preliminary reports show refineries and chemical plants have released millions of pounds of toxic chemicals into the air and water.

"We've seen this as an ongoing issue everytime there's a major storm," said Gretchen Goldman, research director at the Union of Concerned Scientists' Center for Science and Democracy.

The Gulf Coast in Texas and Louisiana is home to about 45 percent of the nation's refining capacity, along with hundreds of petrochemical plants and storage facilities. It's also dotted with toxic waste sites left by decades of heavy industry.

Refineries and chemical plants have reported more than 30 leaks, spills and other emissions to the Texas Commission on Environmental Quality since the storm made landfall Friday. Dozens of other spills have been reported to the Coast Guard's National Response Center.

Some of the emissions happened as plants began to shut down ahead of the storm — Flint Hill Resources began flaring benzene from its refinery outside Corpus Christi, Texas, on Friday.

Chevron Phillips' Cedar Bayou chemical plant in Baytown began flaring chemicals as it shut down Monday. It was expected to release 766,000 pounds of chemicals, according to an estimate by the Sierra Club.

Other incidents were triggered by the storm itself. Lightning struck a unit at Dow Chemical Co.'s sprawling chemical plant in Freeport, Texas, on Sunday morning, according to a filing, and the plant released 34,000 pounds of benzene, toluene, carbon monoxide and other pollutants.

The heavy rain sank the floating lids on storage tanks at Exxon Mobil Corp.'s Baytown refinery, Valero Energy Corp.'s Houston refinery and Royal Dutch Shell PLC's Deer Park refinery, filings show.

By yesterday, an estimated 2 million pounds of chemicals had been released into the air, according to Environment Texas, which calculated the total based on state regulatory filings.

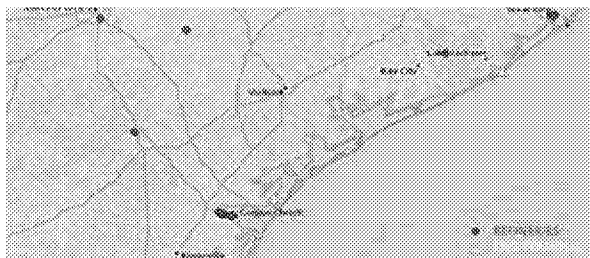
"People are already being exposed to cancer-causing chemicals," said Luke





Metzger, the group's director. "We also know ... that people could get sick from being exposed to the bacteria or toxic chemicals that have spilled or leaked from these facilities or toxic waste dumps."

And more damage is likely. The storm was dumping torrential rains on southeast Texas and southwest Louisiana this morning. Motiva Enterprises LLC shut down its Port Arthur, Texas, refinery, the nation's biggest, at 5 a.m.



【✚】 Tropical Storm Harvey has caused leaks, spills and airborne emissions from refineries along a 300-mile swath of the Texas coast. Data: National Hurricane Center/Energy Information Administration/Esri

The U.S. Chemical Safety and Hazard Investigation Board (CSB) is warning oil and chemical processing facilities to take extra precautions when they restart after the floodwaters recede.

"Restarting a refinery poses a significant safety risk," CSB Chairwoman Vanessa Allen Sutherland said in a statement earlier this week.

A **safety alert** issued by the agency urges facility workers to carefully follow established safety processes and provides a checklist of potential mechanical systems that may have been compromised by the storm and its aftermath.

"In the wake of the hurricane, adhering to appropriate safety management systems can mean the difference between a safe and uneventful startup and a serious incident," the alert said.

Refineries and chemical facilities in Corpus Christi are beginning to restart, according to IHS Markit, a market intelligence company.

But IHS said today that "a key limitation at the moment for producers, refiners and exporters along the Texas Gulf Coast is the shutdown of many key crude oil pipelines."

Plants in Houston will be slower to come back online. IHS noted that parts of the city may see an additional 8 to 12 inches of rain in the coming days, which will prevent the restart of some facilities and may force others to shut down.

The situation there "is still evolving and a full reckoning of the storm's impact is simply not possible at this point," IHS said.

The Union of Concerned Scientists reported in 2015 that refineries on the Gulf Coast faced a unique threat from severe weather driven by climate change. Many are built in low-lying areas, which exposes them to a variety of risks: Floodwaters can float storage tanks off their moorings, and water can seep into pipes and other components (*Energywire*, Nov. 13, 2015).

## Superfund sites

Texas is home to 66 of U.S. EPA's Superfund sites, many of them in Houston and other coastal communities.

Floodwaters can spread their risk, said Mathy Stanislaus, who led EPA's Office of Land and Emergency Management during the Obama administration. The biggest danger likely comes from active cleanup sites where contamination happens at the surface and can leach into floodwaters, as well as underground tanks and storage vessels containing oil and chemicals that dot the Gulf Coast, Stanislaus said.

There are also submerged hazards, such as the 58-acre Brio Refining Inc. site, a former 1950s chemical reprocessing and refining facility in southern Harris County that involved the contamination of groundwater, surface soils and subsurface soils with hazardous chemicals.

Children have been swimming near the Brio site after the storm passed, said Wesley Highfield, a marine sciences professor at Texas A&M University's Galveston campus.

"They're kids. They don't get it," he said, before adding, "My kids aren't in it."

Highfield has collected samples of the runoff water to see whether the floods have increased the contamination from the site.

"It might not be as bad as we think," he said. "Or it could be a whole lot worse."

Stanislaus said there's a need to inform the public to steer clear of petroleum, chemical and toxic waste sites and for an intense post-investigation to determine how far pollutants may have spread, both on land and in

homes.

"Given the huge chemical petroleum complex that's there," he added, "it's hard to know whether there's been a breaching."

Andrew Keese, a spokesman for the Texas Commission on Environmental Quality, said the agency is in "full emergency response" mode and evaluating Superfund sites as they become accessible. As floodwaters recede, Keese said, the TCEQ will continue working with EPA to determine whether sites have been breached and evacuations are necessary.

"Being able to respond has been difficult. In Houston, we're talking about areas that are currently underwater," he said. "What we're dealing with is a storm of magnitude that's never been seen before."

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U.S.

# As Houston Looks to Recover, Small Towns Now Bear the Brunt

By CAMPBELL ROBERTSON, RICK ROJAS and SHAILA DEWAN AUG. 30, 2017

NEWTON, Tex. — For the streets of Newton, a small town on the Texas side of the Louisiana state line, to become impassable, “the flood would have to be biblical,” Kristen Rogers was told when she peeked into the sheriff’s office looking for guidance.

“That’s what they said about Houston,” replied Ms. Rogers, who was looking for a dry way out of rural Texas on her way to Florida.

But as Houston, the urban behemoth that has so far been the focal point in the unfolding drama of Hurricane Harvey, began gingerly to assess the devastation, the storm marched on to conquer a vast new swath speckled with small towns that are home to millions of people who were shocked anew by Harvey’s tenaciously destructive power. Officials faced a population in dire need, but far more difficult to reach.

Flooding and rain, topping 47 inches in some areas, pounded 50 counties in southeast and lower central Texas with a combined population of roughly 11 million people. The area includes more than 300 towns and smaller cities that felt the storm’s punishing force, even as Harvey was downgraded to a tropical depression on Wednesday.

The Federal Emergency Management Agency began to send out heavy-lift military helicopters carrying tons of food and drinking water, delivering it to

people who could not evacuate.

Gov. Greg Abbott of Texas said officials were “immediately deploying far more” members of the National Guard to southeast Texas, increasing the total Guard deployment to 24,000, including 10,000 troops from other states.

In contrast to Houston, where the weather began to clear and a few children even returned to playgrounds, many people in these remote areas are still in desperate need of rescue. “There are a lot of places that are not accessible by car or truck or boat, and we need to get to the survivors to get them critical aid,” said Deanna Fraser, a FEMA spokeswoman.

Pleas for help poured out of the Beaumont-Port Arthur area, roughly 100 miles east of Houston. “We are just as devastated as the Houston area,” said Capt. Crystal Holmes of the Jefferson County Sheriff’s Department, which includes Port Arthur, a coastal city of about 55,000.

When officials there were caught off guard by the scale of the floods, and one emergency shelter started flooding, a MaxBowl bowling alley was transformed into a haven for about 500 people, the owner said.

For every rescue accomplished, Captain Holmes said, there seemed to be more people who needed help: “We have so many citizens that are trapped inside their homes.”

“Eventually we will” get to them, she said, “but we just don’t know if we’re going to be able to get to them in time.”

The police in Beaumont, near Port Arthur, said they had received more than 700 calls for rescue, and other departments were overwhelmed with calls for help. A mother died with her toddler, who survived, clinging to her body, and the number of deaths attributed to the storm climbed to at least 38.

“The geographic scope of this event is probably what is going to make it one of the most costly flood disasters in U.S. history,” said Samuel Brody, the director of the Center for Texas Beaches and Shores at Texas A&M University’s Galveston

campus. “I’ve seen heavy rain, I’ve seen 30, 40 inches, but not over such a large geographic area, impacting rich, poor, black, white

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#### OPEN ACCESS

Pastureland and swampland, cane fields and forests alike began to look like a mud-clouded, Texas version of ark country. Crosby, 25 miles northeast of Houston, faced not only flooding but reports of explosions Thursday when refrigeration that kept compounds at a chemical plant stable failed.

And still, as of Wednesday afternoon, the rain poured down.

Michael LeBouef, a retired surgical assistant who lives in Port Arthur, said air boats, fishing boats and helicopters, operating out of the Walmart parking lot, were running rescue missions.

“The town looks like a lake, it really does,” he said. “It’s like the whole town got dropped into Lake Sabine.”

Even before it hit Houston, Harvey had already deluged a band of smaller cities. “What about the rest of us?” a man named Sam Stone posted on Facebook on behalf of the lower Texas coast towns Aransas Pass, Port Aransas, Ingleside and Rockport, which took the storm head on. “No jobs to go back to, no money, no transportation. All they do is sit and worry about what happens next.”

In Liberty County northeast of Houston, tiny Moss Hill — a couple of restaurants, a couple of churches — had become a refuge for people fleeing the water, which began to creep onto the highways about a mile from town.

Moss Hill is the highest point in the area, and the Lighthouse Church attracted a steady stream of people seeking shelter, while a trail of pickup trucks towing fishing boats passed through on the way to points east.

More than 20 people spent the night at the church. For the most part, they had fled homes nearby. But there was also a man from Florida who was rescued from his car and dropped off there. Newlyweds whose honeymoon road trip had veered horribly off course were given the nursery as a bridal suite.

Residents said they were accustomed to hurricanes and floods, but not of this magnitude. Patty Lee, welcoming visitors with soup, cornbread and sweet tea, ticked off all the towns nearby that were struggling: Kountze, Silsbee, Sour Lake.

“You’ve never had this before,” she said, “so how do you prepare for it?”

On Wednesday at the Simply Country Cafe, one of the few places open, B.J. Price said her home in nearby Batson had not flooded, but her property was engulfed. In the cafe, she got word that another friend had water up to the roofline.

Ms. Price said 1994 was the “only other time I’ve seen it like this, and it wasn’t on this magnitude.” She added, “This is the most catastrophic thing I’ve seen in my life.”

Ms. Price said she knew how widespread the storm’s toll was, and she knew that in the past rural areas like this one did not always get the most immediate aid.

“We’re not forgotten,” she said. “It just takes them a little longer to get to us.”

Rural residents insisted that they were used to being far from outside help and that self-reliance and an ethos of neighbors helping neighbors came with the territory.

The cafe in Moss Hill, for instance, sent pancakes and bacon over to the church on Wednesday morning, and some raided food from their own pantries, and even pillows off their beds, to donate.

In Bon Wier, Tex., people gathered at the Citgo, arriving by boat, truck or even dump truck, and helped others to a shelter in nearby Newton, where volunteers cheerfully divided up donated Clif bars and Fritos.

The shelter had been organized through Facebook and text messages, primarily by a woman who works in a furniture store. One family with a catering business was making a huge bin of pasta. “In an hour we really need to start thinking about showers,” said John Puz, another volunteer.

There, Ambika Seastrunk, a 38-year-old mother of five, waxed philosophical about the previous time she lost her home. It was last year.

But she got a new home, a double-wide trailer, that sits right by the Sabine River. It was a beautiful home. Is — or was. She couldn't say.

Campbell Robertson reported from Newton, Tex.; Rick Rojas from Moss Hill, Tex.; and Shaila Dewan from San Antonio. David Montgomery contributed reporting from Austin, Tex.; Dave Philipps from San Antonio; Jess Bidgood from Boston; and Matt Stevens from New York.

A version of this article appears in print on August 31, 2017, on Page A1 of the New York edition with the headline: Storm Churns East, Soaking Gulf Region With a Wider Band of Ruinous Flooding.

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BEAUMONT ENTERPRISE <http://www.beaumontenterprise.com/news/article/Beaumont-could-be-without-water-for-days-12163451.php>

## Beaumont could be without water for days

The Enterprise Published 4:27 am, Thursday, August 31, 2017



IMAGE 1 OF 6

Barry Miller walks through the electrical room at the Beaumont water plant on Pine Street Tuesday. The Beaumont Water Department uses about \$1,000,000 worth of energy each year. Photo taken Tuesday, January ... [more](#)

Beaumont is without a water supply after floodwaters knocked out the city's main pump station near the Neches River before 12:30 a.m. Thursday, Beaumont Fire Capt. Brad Penisson wrote on the city's website. The city of 120,000 also lost its secondary water source in Hardin County.

"Seriously bad news. The City of Beaumont will be without water for the next several days," councilman Mike Getz posted on Facebook at 1 a.m. "Fill your bathtubs with water now."

The water was off around 2 a.m.

"We will have to wait until the water levels from this historical flood recede before we can determine the extent of damage and make any needed repairs," the city's statement said. "There is no way to determine how long this will take at this time."

Getz estimated the restoration could take until Monday or Tuesday.

One commenter on his post said she was praying there wasn't a fire emergency.

"That could be a real problem," Getz replied.

Another asked Getz if he thought the city or FEMA would set up water stations.

"I know, it is going to be a difficult situation," he replied. "I am confident that the City will make arrangements to truck in water."

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<http://www.chron.com/news/houston-weather/hurricaneharvey/article/East-Texas-county-tells-residents-GET-OUT-OR-12162456.php>

## East Texas county tells residents 'GET OUT OR DIE!'

By Fernando Ramirez, Chron.com / Houston Chronicle Updated 7:54 pm, Wednesday, August 30, 2017



**Tyler County Emergency Management**

1 hr · 🌐

The U.S. Army Corp of Engineers has advised the Tyler County office of Emergency Management that the flood gates were opened to 100 feet at 3:00 pm CSDST. River levels will rise to near seventy nine feet. With additional rain fall accumulations, a potential elevation could reach near eighty two feet. All residents living in Mt. Neches, Barlow Lake Estates, Works Bluff on CR 4415, Sheffield Ferry and Bottom Loop-CR 4700 who have not already evacuated must do so immediately. Anyone who chooses to not heed this directive cannot expect to be rescued and should write their social security numbers in permanent marker on their arm so their bodies can be identified. The loss of life and property is certain.

**GET OUT OR DIE!**

**\*Call 911 or 409-283-2172 for anyone needing a boat assistance rescue\***

**Tyler County Judge Jacques Blanchette**

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**IMAGE 1 OF 184**

**Photos: Harvey after Houston**

Emergency management officials in Tyler County, East Texas recently posted a Facebook message warning residents to "GET OUT OR DIE" if they are near an area where the U.S. Army Corp of Engineers is opening flood gates.

**See photos of the destruction and flooding caused by Harvey.**

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Emergency Management officials in Tyler County in East Texas posted a harrowing Facebook message Wednesday evening warning residents of imminent and deadly flooding.

"The U.S. Army Corp of Engineers has advised the Tyler County office of Emergency Management that the flood gates were opened to 100 feet at 3:00 pm CSDST," wrote Tyler County Judge Jacques Blanchette. "River levels will rise to near seventy nine feet.

With additional rain fall accumulations, a potential elevation could reach near eighty two feet."

The alarming message said residents near the area must evacuate immediately.

### **STORM DEATHS: Death toll from Harvey flooding exceeds 30**



"Anyone who chooses to not heed this directive cannot expect to be rescued and should write their social security numbers in identified," wrote Blanchette. "The

OR DIE!" along with a phone number for anyone needing boat assistance or rescue.

Tropical Storm Harvey made a second landfall in Louisiana early Wednesday. Along the way, it has dumped rain on east Texas communities, including Tyler County.

### **AFTER HARVEY: How to help victims of the Texas storm**

According to the National Weather Service, communities in Southeast Texas received between 8-15 inches of rainfall as Harvey slowly made its way to Louisiana.

In Harris County, an average of 27 inches fell on the region between Friday and Monday, with some spots receives a record 50 inches.

**See photos of the destruction and flooding caused by Harvey above.**

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**The New York Times** | <https://nyti.ms/2wUFGZS>

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U.S.

# A Sea of Health and Environmental Hazards in Houston's Floodwaters

By HIROKO TABUCHI and SHEILA KAPLAN AUG. 31, 2017

Officials in Houston are just beginning to grapple with the health and environmental risks that lurk in the waters dumped by Hurricane Harvey, a stew of toxic chemicals, sewage, debris and waste that still floods much of the city.

Flooded sewers are stoking fears of cholera, typhoid and other infectious diseases. Runoff from the city's sprawling petroleum and chemicals complex contains any number of hazardous compounds. Lead, arsenic and other toxic and carcinogenic elements may be leaching from some two dozen Superfund sites in the Houston area.

Porfirio Villarreal, a spokesman for the Houston Health Department, said the hazards of the water enveloping the city were self-evident.

"There's no need to test it," he said. "It's contaminated. There's millions of contaminants."

He said health officials were urging people to stay out of the water if they could, although it is already too late for tens of thousands.

"We're telling people to avoid the floodwater as much as possible. Don't let your children play in it. And if you do touch it, wash it off," Mr. Villarreal said. "Remember, this is going to go on for weeks."

Flooding always brings the danger of contamination and disease. This inundation, which put nearly 30 percent of the nation's fourth-largest city underwater, will pose enormous problems, both immediately and when the waters finally recede.

Dr. David Persse, Houston's director of Emergency Medical Services, said officials were monitoring the drinking water system and the sewer system, both of which he said were intact so far. But hundreds of thousands of people across the 38 Texas counties affected by Hurricane Harvey use private wells, according to an estimate by Louisiana State University researchers, and those people must fend for themselves.

"Well water is at risk for being contaminated," Dr. Persse said, "and the well owner is really the one who is responsible. In the City of Houston, we have folks who use well water but we strongly recommend against it — and this will sound awful — we don't take responsibility for it."

Harris County, home to Houston, hosts more than two dozen current and former toxic waste sites designated under the federal Superfund program. The sites contain what the Environmental Protection Agency calls legacy contamination: lead, arsenic, polychlorinated biphenyls, benzene and other toxic and carcinogenic compounds from industrial activities many years ago.

Kathy Blueford-Daniels grew up just a block away from one of those sites, a wood-treating facility that used cancer-causing creosote and other toxins. As a young girl, she would try to avoid the plant and the pungent, oil-like goo that lined the ditches around it.

Now 60, Ms. Blueford-Daniels still lives on the same block, in Houston's Fifth Ward. So when Harvey's rains started to pour into her neighborhood, she immediately began to wonder what the rising waters would carry off the old industrial property.

"I wasn't so fearful of the storm. But I'm scared of that site," she said. "I thought: This is going to be a travesty. The contamination could be going anywhere."

An E.P.A. spokesman, David Gray, said in a statement that the agency would inspect two flooded Superfund sites in Corpus Christi, but he did not specify which ones or say whether additional sites elsewhere in Texas would be checked.

Houston also lies at the center of the nation's oil and chemical industry, its bustling shipping channel home to almost 500 industrial sites. Damaged refineries and other oil facilities have already released more than two million pounds of hazardous substances into the air this week, including benzene, nitrogen oxide and volatile organic compounds, according to a tally by the Environmental Defense Fund of company filings to Texas state environmental regulators.

"We're very concerned about the long-term implications of some of the emissions," said Elena Craft, a senior health scientist and toxicologist at the Environmental Defense Fund in Texas.

"As well as the flooding and the impact on pipelines, there's underground and aboveground storage tanks," she said. "It's a suite of threats."

Houston's sewer systems have also long struggled with overflows, drawing scrutiny from federal regulators who worry about raw sewage seeping into groundwater. Like dozens of cities across the country, Houston has been negotiating a consent decree with the E.P.A. that would require the city to upgrade its pipes and overhaul its maintenance regime.

"Houston's had problems with their sewer system in the past. They already had cracks and leaks that were allowing storm water to get into the sewers," said Erin Bonney Casey, research director at Bluefield Research, a water-sector consultancy based in Boston.

"When it rains, the sewer pipes get infiltrated with storm water. The pipes exceed their capacity and you get discharge of a mix of sewer water and storm water," she said. "As you can imagine, this raises major concerns around disease and contamination of local water supplies."

Marc Edwards, the Virginia Tech professor who helped identify the Flint water contamination crisis, said Houston's abundance of private water wells

added the city's woes. People who evacuate return home and use them, to their great risk.

"Poop from animals and humans that normally does not get into the water supply is present" in the wells, he said, and "if they are present in water that you drink it would cause massive epidemics in a matter of days."

He added: "Everything else, as horrible as it is, is really a more chronic secondary concern. It's pretty rare that those things are present in flood water, short term, in levels that can kill you.

Stan Meiburg, a former acting deputy director of the E.P.A., said one hope was that there was just so much water that it might dilute pollutants and fecal matter in the water.

But he also worried about people who had three or four feet of water in their houses and would not realize that all the pesticides and hazardous products they keep under the sink would now have contaminated their houses.

"After Katrina, when the floodwaters receded, we had to go around to assist communities to pick up debris and leftover chemicals, like propane tanks, pesticide containers that were compromised and household hazardous waste," said Mr. Meiburg, now director of graduate programs in sustainability at Wake Forest University.

"The water is going to be polluted," he said. "You know that from the get-go."

## EXTREME WEATHER

### The myth of the 100-year flood

Ariel Wittenberg, E&E News reporter

Greenwire: Wednesday, August 30, 2017



[+] The 100- and 500-year floodplains in Houston. Statistically speaking, a home in the 100-year floodplain has a 26 percent chance of flooding over the course of a 30-year mortgage. A home in the 500-year floodplain has a 6 percent chance. Claudine Hellmuth/E&E News; Map data: Harris County Flood Control District/©2017 HERE/©2017 Microsoft Corp.

With southeast Texas facing years of recovery after Tropical Storm Harvey's catastrophic floods, many ask whether the devastation could have been prevented or mitigated.

Experts say yes. They blame how the government assesses and communicates flood risk.

Federal policies are built around the so-called 100-year floodplain, which is commonly and incorrectly understood as an area that would flood once every century. But it really means there's a 1 percent chance of flooding in any given year or that there's a 26 percent chance of being flooded at least once during a 30-year mortgage period, according to the Federal Emergency Management Agency.

Moreover, flood maps don't take into account pavement and development that takes place in wetlands or floodplains. Putting impervious pavement on top of natural sponges will only make flooding worse.

President Trump flubbed the numbers with a tweet describing Harvey as a "once in 500 year flood." But homes in a 500-year floodplain really have a 6 percent chance of flooding over a 30-year mortgage.

For what it's worth, Harvey is Houston's third "500-year flood" since 2015.

"You have a 1 in 6 chance of rolling a dice and landing on four, but you can still land on four twice in a row," said Stephen Strader, a professor of geography and the environment at Villanova University. "The same goes for a 100-year flood or a 500-year flood."

To stem the confusion, FEMA has started referring to floodplains by their annual probability of flooding. So, the 100-year floodplain becomes the 1 percent floodplain and the 500-year floodplain becomes the 0.2 percent floodplain.

But experts say changing the lingo without changing policies isn't enough.

"The biggest problem with flood maps in the U.S. is that they are drawn as 'lines in the sand' — at risk of flooding on one side, and A-OK on the other side," said Nicholas Pinter, director of the University of California, Davis' Center for Watershed Sciences.

"This is a false and dangerous message to send," he said.

Homes in the 100-year floodplain are required to get federal flood insurance through the National Flood Insurance Program. Those located outside the 100-year area — no matter how close they are to it — aren't

required to get flood coverage, although it is offered for homes located in the 500-year floodplain.

In Harris County, Texas, where Houston is located, that means just 12 percent of the 1.6 million properties are required to have flood insurance.

Property owners in the 100-year floodplain are also eligible for funding to help them mitigate flood risk by putting their homes on pilings or fill. Local governments generally concentrate their building and planning standards around the 100-year floodplain, creating extra requirements for elevating homes in those areas.

While mandatory insurance purchasing requirements haven't stopped development within the 100-year floodplain, studies have shown that they have significantly increased development in areas immediately outside those areas, where buildings can still have shoreline views without adhering to strict building codes.

But those edge locations can be just as vulnerable as properties built within the 100-year floodplain.

A study of flood insurance claims in Houston between 1999 and 2009 found 55 percent were from beyond the 100-year floodplain boundary, with an average distance of just under 1,400 feet.

Damage beyond the 100-year floodplain can still be significant. Another study of Houston in the 1999-2009 time frame found every meter away from the floodplain translated into just a \$18 decrease in flood damage. During Tropical Storm Allison in 2001, that meant living 0.2 mile outside the 100-year floodplain only reduced the average repair bill by \$7,365 but still caused \$24,331 worth of damage, the study found.

Sandra Knight, former deputy associate administrator for mitigation at FEMA, points out that there really isn't a good risk-based reason to put so much policy weight on the 100-year floodplain.

The 100-year flood standard was set in 1973 as a compromise between the Army Corps of Engineers, which was building levees and dams to the 200-year flood level, and communities that generally relied on far lower five- to 20-year flood standards.

"We have basically taken a condition for insurance, which is based on probability, and set it up as a de facto standard for floodplain management, all because of the flood insurance program," said Knight, who is now a senior research engineer at the University of Maryland. "But it doesn't reflect the risk, it reflects the probability."

### **Inaccurate maps**

Another issue: FEMA flood maps intended to show where 100- and 500-year floodplains are located rely on data from historic floods to predict what area would be affected by a new 100-year event.

Critics of the National Flood Insurance Program have long complained that the maps are not updated often enough. And when the maps are revised, they say, statistical models used to create the maps don't consider changes in land use, which can significantly affect flood risks as pavement replaces grass and trees.

"Imagine pouring water on a sponge versus pouring it on a table top," Strader said.

Similarly, flood maps also don't consider the efficiency of a community's stormwater drainage system, or other factors that could worsen inland flooding.

That's particularly problematic in storms like Harvey whose main hazard is rain, not wind. Such storms are more likely to cause damage outside the 100-year floodplain when paved areas drain poorly.

Such storms are only likely to become more common because of climate change, scientists say, as warmer oceans increase precipitation in storm systems.

Because FEMA uses historic data to calculate flood maps, they don't take into account the probability that future storms could bring more rain.

"We have a changing climate, and we're using a statistical model for our maps that doesn't provide any more statistical weight to near-term changes in the environment," Knight said.

Pinter is quick to caution that the U.S. is much better prepared thanks to the 100-year flood standard and the maps that come with it than it would be without any standard at all.

But, he said, Harvey shows how policy flaws can exacerbate problems caused by severe storms.

"Every flood disaster is like a prizefight — it takes two participants in the ring," he said. "A big flood starts with a momentous meteorological event, but only happens if that event collides into infrastructure built without enough protection or caution."

Strader agreed. While he acknowledged "no city could withstand 30-plus inches of rain in 72 hours ... urban sprawl and increased development has only exacerbated the situation."



Increased investment in FEMA's flood mapping program and changes to statistical models used in mapping would be a good first step to improving the nation's flood preparedness, experts agree.

"Unfortunately, these processes ... take money and federal support," Strader said.

## Politics

Both Pinter and Strader expressed concern that the Trump administration would consider planning for climate change in flood mitigation given that Trump revoked an Obama-era executive order this month that would have required federal-funded infrastructure being built in floodplains to account for higher sea-level rise and more intense storms (*Climatewire*, Aug. 16).

Others have suggested setting a flood standard for larger storms — a 1,000-year flood, for example, or basing flood policy on a gradient rather than a specific flood probability. Such changes would require major policy overhauls by Congress and the administration. Neither has shown any appetite for changing flood standards.

Bottom line, Knight said, is that improved communication with consumers is critical.

"People always think that it will never happen to them, but if you really explain that your home is in an area where it has a 1 in 4 chance of flooding over a mortgage, hopefully that would hit home," Knight said.

"That's pretty high odds considering that a mortgage is one of the biggest investments families make," she said.

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# Flooded refineries raising concerns about gas shortages

Gas hard to find in some parts of North Texas

Flooded refineries causing gas shortages across North Texas

By: FOX4News.com Staff POSTED: AUG 30 2017 09:31PM CDT  
UPDATED: AUG 31 2017 08:19AM CDT

**DALLAS** - You may have to look a bit harder than normal in some places where there are shortages and occasional long lines for gasoline .

There were crazy long lines at a Texaco gas along Highway 75 at McDermott Road in Allen Wednesday night. An attendant told FOX 4's Saul Garza he stood outside to direct traffic while people waited up to 20 minutes to fill up. The station ran out of gas around 9:30 p.m.

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The pumps there were closed Thursday morning and a few others in the area had plastic bags over certain pumps. But people were filling up as normal at the Tom Thumb gas station across the street and other gas stations in the neighborhood.

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3 PHOTOS



Quick Trip announced it is cutting in half the number of locations with gas. The company has 135 locations across the Dallas-Fort Worth area and doesn't want to spread limited gasoline supplies too thin.

"We will have designated stores in all quadrants of the Dallas Fort Worth area and make sure those stores will constantly have carriers back and forth supplying gasoline," Thornbrugh explained. "And the other stores will be open but won't have gas until the situation gets better."

Supplies are limited because Hurricane Harvey forced nearly a dozen refineries in South Texas to shut down. The nation's largest refinery in the Beaumont-Port Arthur region closed Wednesday when the area started flooding.

The Environmental Protection Agency is granting waivers to ignore certain regulations to keep the fuel supply up.

AAA said some refineries may start up again this weekend but it could take a couple of days for gasoline supplies to reach those big storage tanks and tanks where local convenience stores get their fuel.

Drivers said they're seeing more and more stations with "no gas" signs and pumps covered with yellow bags. Prices, and anxiety levels, are getting higher.

"Makes you want to stock up on gas and makes you not want to drive anywhere," said driver April Wiggins. "But it's not realistic. We still have to go to work. Our daily lives have to go on. It's kind of nerve racking."

The average price of gasoline right now in the DFW area is \$2.39 per gallon of unleaded but that is expected to go up. Some FOX 4 viewers have reported seeing prices as high as \$3.20. Attendants explained those gas stations likely just got a new supply of gasoline and the price reflects how much they had to pay for it.

Still, the Texas Attorney General will investigate reports of price-gouging.

"If you are a business you could be put out of business by the Texas Attorney General... if you dare try any price gouging. It's unTexan and we will not tolerate it," Gov. Greg Abbott said.

The cases will be investigated by the AGs office and district attorneys. Reports can be made at [www.texasattorneygeneral.gov/cpd/price-gouging](http://www.texasattorneygeneral.gov/cpd/price-gouging).

<http://www.chron.com/business/energy/article/Perry-taps-federal-oil-reserve-12163683.php>

## Perry taps federal oil reserve

By James Osborne Updated 7:41 am, Thursday, August 31, 2017



IMAGE 1 OF 2

A contractor works on oil pipeline infrastructure at the U.S. Department of Energy's Bryan Mound Strategic Petroleum Reserve in Freeport.

Energy Secretary Rick Perry has tapped into the federal Strategic Petroleum Reserve to offset fuel shortages caused in the aftermath of Hurricane Harvey.

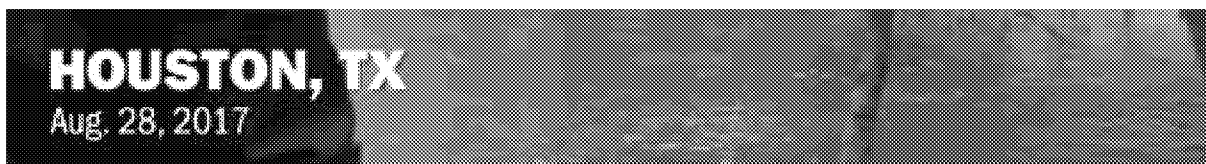
Historic flooding along the Gulf Coast knocked out ports and pipelines, blocking oil tankers from docking and slowing the flow of crude upon which the nation's refinery hub around Houston is dependent. On Thursday morning the Department of Energy announced it would deliver half a million barrels of crude to the Lake Charles refinery operated by Phillips 66.

"The Department will continue to provide assistance as deemed necessary, and will continue to review incoming requests for SPR crude oil," the energy department said.

The crude will be drawn from the SPR's West Hackberry site, a mix of 200,000 barrels of sweet crude and 300,000 barrels of sour crude.

Close to half of the nation's refining capacity is located on the Gulf Coast. As of Wednesday afternoon, 40 percent of that refining capacity was offline, with refineries in Texas and Louisiana trying to recover from historic flooding and storm-related damage following record rainfalls.

Business Channel





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"The unprecedented rainfall, flooding and destruction from Hurricane Harvey this week has struck the energy nerve center of the nation and is exactly the kind of event of "significant scope and duration, and of an emergency nature" that the SPR was created to address," former Energy Secretary Ernest Moniz said Thursday morning.

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HEARST

# Harvey's winds and rain disrupt Texas agriculture

Hurricane Harvey did more than transform cityscape by turning highways into rivers; it also upended life for farmers and ranchers across dozens of counties that Gov. Greg Abbott declared disaster zones.

BY JIM MALEWITZ    AUG. 30, 2017    16 HOURS AGO



Cotton crop ruined by Harvey in Refugio County, about 6 miles south of Refugio on US 77, on Wednesday, Aug. 30, 2017.

 Bob Daemmrich for The Texas Tribune

Like many of his neighbors, Robby Reed had high hopes for his cotton fields in 2017.

"It was going to be my best cotton crop year ever," said Reed, who raises a variety of crops on some 2,500 acres outside of Bay City, about 80 miles southwest of Houston.

"Everybody was making big cotton crops."

Then along came Harvey.

The hurricane-turned-tropical storm devastated a wide swath along Texas' Coastal Bend. Flooding from the relentless rains sent five feet of water into Reed's two-story house and swamped his only partially harvested cotton fields.

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"Everything else is just, you know, kind of wasted," the 39-year-old said this week.

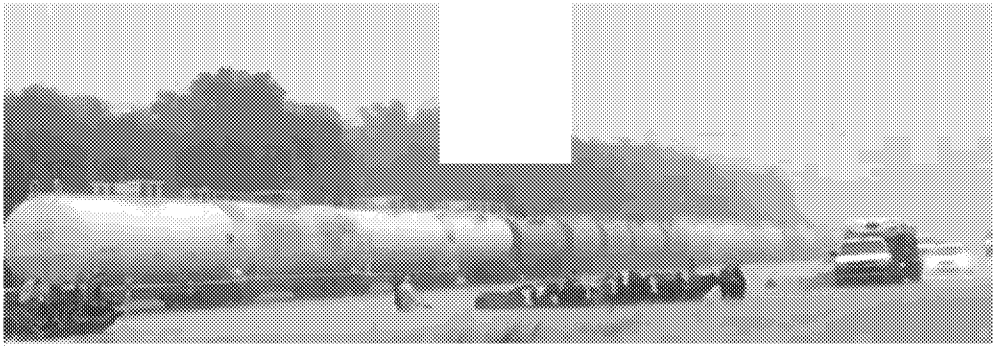
Harvey did more than transform cityscape by turning highways into rivers; it also upended life for farmers and ranchers across dozens of counties that Gov. Greg Abbott declared disaster zones. The powerful winds and rains destroyed crops, displaced livestock and disrupted trade.

Texas typically exports nearly one-fourth of the country's wheat and a major portion of its corn and soybeans, according to the state Department of Agriculture, but a shutdown of ports ahead of Harvey halted export.

At least 1.2 million beef cows graze in in 54 counties Abbott had added to his disaster list as of Tuesday, according to Texas A&M AgriLife Extension Service. State and industry officials did not immediately have data on how many were lost, but news reports and social media have circulated images of wandering cattle and dramatic rescues of the animals from floodwaters.

"There have been a lot of wonderful stories going around on social media of people banding together to help save one another's livestock," Agriculture Commissioner Sid Miller said in statement. "I want to send a great big thank you to these folks for doing things the Texas way, which is to be a great neighbor and help those in need."



**TxDOT-Beaumont**

@TxDOTBeaumont

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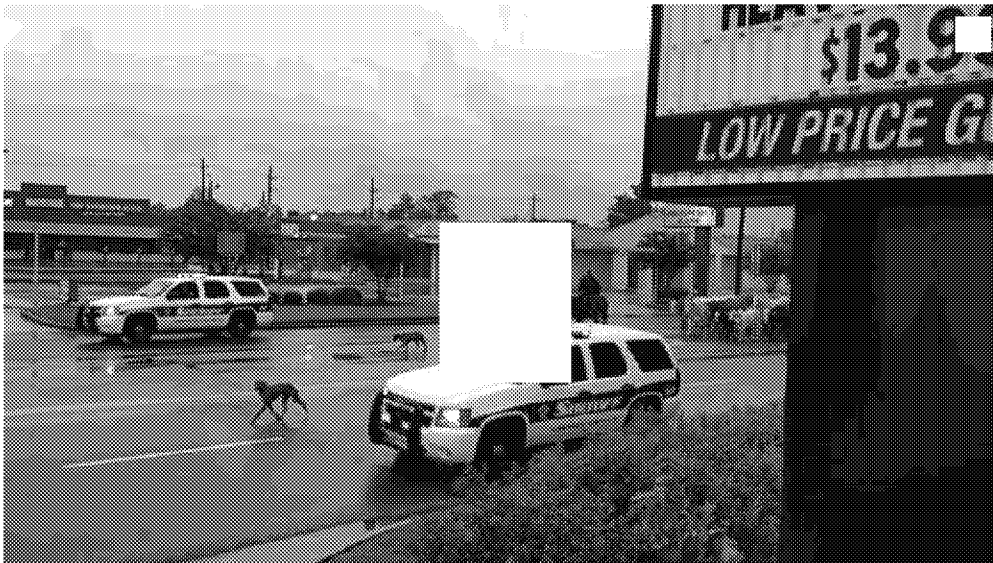
Small cattle drive on SH124 in BMT right now. Be careful, lots of livestock trying to find higher ground #Harvey

11:15 AM - Aug 29, 2017

30

840

985

**Hilary Scheinuk**

@hscheinukphoto

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A cattle drive takes to the streets of Dayton, Tx. due to #Harvey  
#txwx

Video via Rebekah Brand

11:21 PM - Aug 27, 2017

5

92

132

Harvey also affected cropland. Texas rice producers had already harvested about 75 percent of the year's rice crop, according to the Agriculture Department, but wind and water likely damaged storage bins, leading to more crop losses.

Harvey hit cotton farmers like Reed particularly hard, destroying their prospects of a banner year. While the region's crops — corn, for instance, were out of the ground before the storm hit, cotton was another story.

"A lot of cotton didn't get harvested," said Gene Hall, a spokesman for the Texas Farm Bureau. "We know that they were racing the clock trying to beat landfall ... I think anything left on the clock, you got to consider that a total loss."

In Matagorda County, for instance, just 70 percent of cotton had been harvested, while only 35 percent was out of the ground in Wharton County, Hall said.

What's more, high-speed winds ripped apart cotton modules — machines that pound processed cotton into rectangular blocks — leaving them strewn about fields and gin yards.

Reed said the floodwaters had kept him from even being able to survey the damage to some of his land near Matagorda Bay, and that he planned to soon take a ride in his buddy's helicopter to take a look.

Though Reed said his family would ultimately "be alright" after rebuilding and replanting, they wouldn't forget this setback.

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"There's been some storms and hurricanes, but nothing like this that I can remember," he said. "I don't even remember the name of the storms and hurricanes and the year it was, but I'm pretty sure I'll remember Harvey in 2017."

## How to help

Those wanting to assist Harvey-struck farmers and ranchers have a few options, according to the Texas Department of Agriculture.

They can donate to the State of Texas Agriculture Relief Fund, which is managed by the Agriculture Department but only accepts private donations. Find more details [here](#).

The Agriculture Department also accepts donations of hay and animal feed. Find more information [here](#), or call 512-463-9360.

Those wanting to volunteer; report live or dead animals; or donate shelter or supplies for animal can call the [Texas Animal Health Commission's Animal Response Operation Coordination Center's Hurricane Harvey hotline: 512-719-0799.](#)

*Disclosure: The Texas Farm Bureau and Texas A&M AgriLife Extension Service have been financial supporters of The Texas Tribune. A complete list of Tribune donors and sponsors can be viewed [here](#).*

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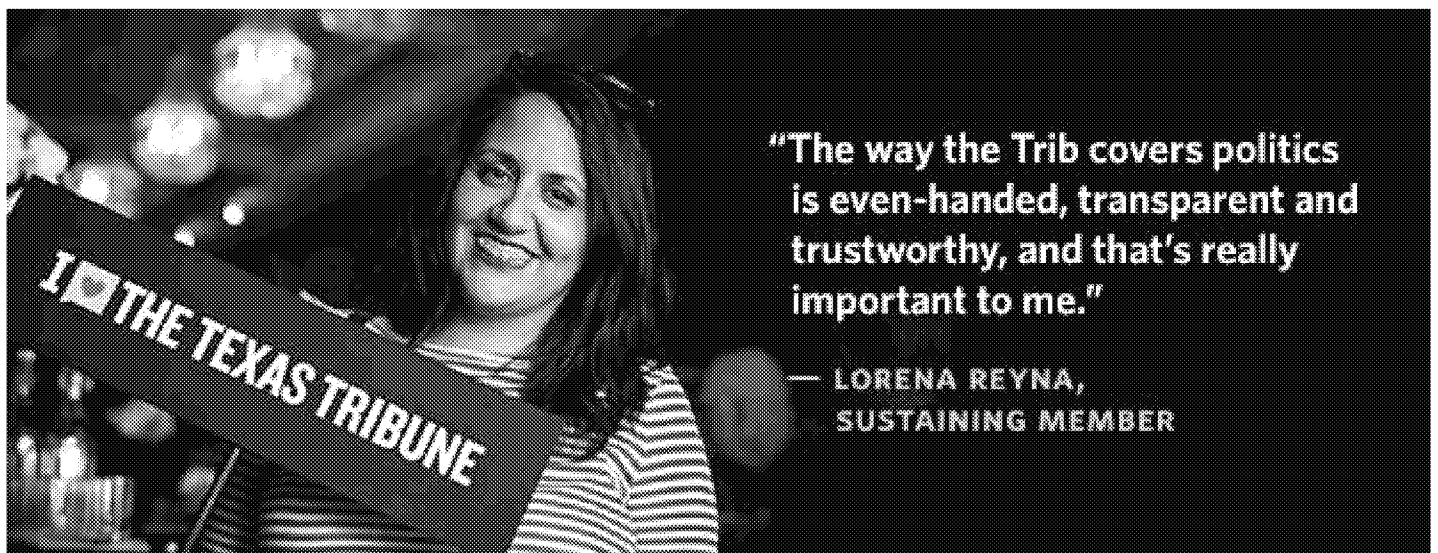
- Hurricane Harvey may be on its last days in Texas, but the state — particularly Houston — has a long road to recovery ahead. [\[Full story\]](#)
- As chemicals heat up in a Crosby, Texas, manufacturing plant, a large-scale fire or explosion looks increasingly likely. [\[Full story\]](#)
- State leaders and agriculture groups applauded an executive order issued by President Trump on Tuesday that suggests the controversial "Waters of the U.S." rule finalized under President Obama could be reversed. [\[Full story\]](#)

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 <http://www.mysanantonio.com/news/article/Tropical-Storm-Irma-forms-in-Atlantic-and-we-re-12161180.php>

## Tropical Storm Irma forms in Atlantic, and we're still watching Gulf of Mexico early next week

Brian McNoldy, The Washington Post **Published 10:37 am, Wednesday, August 30, 2017**



IMAGE 1 OF 14

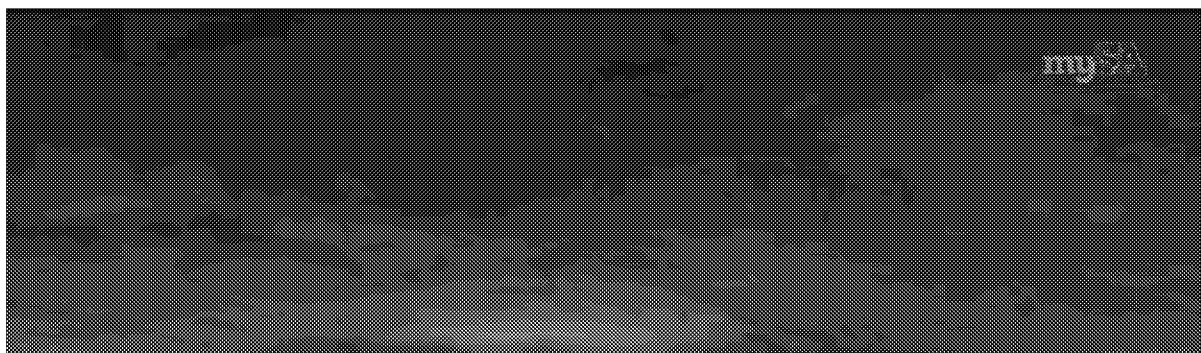
A boat makes its way up the flooded Lake Houston Parkway as floodwaters from Tropical Storm Harvey rise Tuesday, Aug. 29, 2017, in Kingwood, Texas. **Keep clicking to see the worst Atlantic storms that have hit** ... [more](#)

A tropical disturbance that just left the African coast Sunday has become the hurricane season's ninth named storm over the eastern tropical Atlantic Ocean. The National Hurricane Center declared that Tropical Storm Irma had formed at 11 a.m. Eastern, and it is expected to strengthen. It is many days away from any land, but should be monitored by interests in the Caribbean and U.S.

Meanwhile, a tropical system that could form in the western Gulf of Mexico near Louisiana and Texas early next week bears watching.

**THE LATEST:** Get rolling updates, newest photos on Harvey [here](#)

Local Channel





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Irma was positioned 420 miles west of the Cabo Verde Islands Wednesday, with maximum sustained winds of 50 mph. It was tracking west at 13 miles per hour.

Computer models are in excellent agreement that this storm will intensify in the coming days and could reach hurricane intensity by Friday or this weekend. It is still very far east - 2,100 miles east of the Leeward Islands - so there is plenty of time keep a watchful eye on it. Through the next four or so days, models also agree on where it will track, but beyond that, some potentially-important divergence sets in.

The farther north it goes, the more likely it becomes that it will recurve to the north and away from land. But if it stays farther south, away from weaknesses in a large area of high pressure in the subtropics (to its north), it can keep cruising toward the Caribbean, Central America, Mexico and possibly the United States.

### READ ALSO: Van with 6 drowned family members reportedly found

Historically, over the past 50 years, the ninth named storm has formed Sep. 30, on average, so Irma is exactly one month ahead of par. Accumulated Cyclone Energy, or ACE, is another useful metric we commonly use to assess how busy the hurricane season is. It is a single value that integrates information about all of the various storms' intensities over their entire life span. The ACE so far this hurricane season is at only about 92 percent of average, despite Harvey.

Harvey's rampage in the Gulf of Mexico and Southeast Texas aside, the hurricane season is still young and just approaching its peak.

Another area we continue to monitor is the northwestern Gulf of Mexico. Just days after Harvey moves out, another tropical disturbance or tropical cyclone could move in. It does not yet exist, but models have consistently been hinting at a disturbance developing in the Bay of Campeche and tracking toward Texas by Wednesday.

The latest run of the U.S. GFS model produces 10 to 15 inches of rain in a swath spanning southeast Texas through southern Louisiana. There is still a lot of uncertainty with this system, but given the potential, it is important to be aware of it. If it develops but tracks a bit further east, the Texas coast could be spared.

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HEARST

Delivery alert until NaN

## **'Clean energy' petition targets pollution in New Mexico**

**By Susan Montoya Bryan / Associated Press**

**Published: Wednesday, August 30th, 2017 at 2:04pm**

**Updated: Wednesday, August 30th, 2017 at 3:42pm**



FILE - This April 20, 2011 file photo shows dozens of rows of solar panels that make up Public Service Co. of New Mexico's new 2-megawatt photovoltaic array in front of the utility's natural gas-fired generating station in Albuquerque, N.M. The New Mexico Attorney General's office and consumer advocates on Wednesday, Aug. 30, 2017, presented a petition to state regulators to consider adopting a

clean energy standard that calls for utilities to reduce their carbon dioxide emissions. (AP Photo/Susan Montoya Bryan, File)

ALBUQUERQUE, N.M. — The New Mexico Attorney General's Office and consumer advocates are petitioning state regulators to consider a new energy standard they say would protect utility customers and shareholders from the costs and risks associated with future environmental regulations.

The proposed standard calls for electric utilities to reduce carbon dioxide emissions from power plants that serve customers in the state by 4 percent a year through 2040. Supporters say that could amount to a reduction of several million tons of carbon dioxide, considered a prime contributor to global warming.

Steve Michel, the energy policy chief with the environmental group Western Resources Advocates, presented the proposal to the Public Regulation Commission on Wednesday. It will be up to commissioners whether to begin the rulemaking process, which would include gathering comments, technical workshops and public meetings.

Michel argued the importance of transitioning to cleaner energy sources, saying utilities can face significant costs if they wait until regulations are in place. He also said there would be environmental benefits to curbing the state's reliance on coal-fired power plants.

"It's almost certain that the U.S. is going to have to address carbon pollution. It's just something that has to be done," he said in an interview. "This proposed regulation would assure utilities in the state are well-positioned to address that as it emerges."

The shift already is happening among investor-owned utilities. The state's largest electric provider, Public Service Co. of New Mexico, is preparing to shutter part of its coal-fired power plant in northwestern New Mexico by the end of the year and it has invested almost \$270 million in 15 solar generation facilities. The utility plans to add more solar to its portfolio under a plan submitted to regulators earlier this year.

Public Service Co. spokesman Pahl Shipley said the utility would reserve its comments on the clean energy standard until a final version of the proposed rule is drafted.

Michel told the commission that New Mexico's utilities are well-positioned to comply with the standard given their current plans.

The push for more regulations and laws aimed at curbing emissions in New Mexico has waned somewhat in recent years as it appeared the federal government would be taking the lead in forcing utilities to divest themselves of coal-generated electricity.

That interest was renewed among environmental groups and some elected leaders when the administration of President Donald Trump indicated it would pull out of the 2015 Paris climate accord, an agreement signed by nearly 200 nations to reduce carbon emissions. Trump has also promised to help promote the use of U.S. produced coal.

Attorney General Hector Balderas, a Democrat, said his office supports the petition because he believes states, cities and businesses will have to fill what he referred to as a regulatory void.

"This proposed clean energy standard would have New Mexico begin to do that," he said.

A preliminary report recently produced by 13 federal agencies states the annual average temperature is already 1.18 degrees warmer the last 30 years than it was from 1901 to 1960. If carbon pollution continues unabated, the report suggests temperatures are projected to rise another 4.83 degrees by mid-century and 8.72 degrees by the end of the century, or a few degrees less if emissions are cut somewhat.

Michel said the 4 percent target identified in the proposal is consistent with the reductions scientists say would be needed to limit increases in temperature to prevent the most catastrophic effects of climate change.

He also said the program would be consistent with similar efforts in California and the nine eastern states that participate in the Regional Greenhouse Gas Initiative.



# As Hurricanes Bear Down, Tribes Act Quickly to Build Resilience Plans

*After Hurricane Rita, the Biloxi-Chitimacha-Choctaw and Houma Nation in Louisiana had to be entirely relocated. Now, 24 tribes are building plans to mitigate climate disaster.*



Todd Mitchell, environmental director of Swinomish Department of Environmental Protection, digs clams.

YES! photos by Lori Panico.

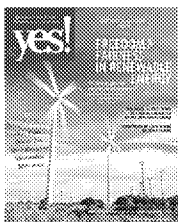


**Terri Hansen** posted Aug 30, 2017

Chief Albert Naquin was astounded when emergency officials warned him in September 2005 that a second hurricane would soon hammer the southern Louisiana bayous where Hurricane Katrina had struck less than a month earlier. The leader of the Biloxi-Chitimacha-Choctaw tribe, Naquin took to the Isle de Jean Charles' lone road to urge residents who had returned home after Katrina to leave their listing, moldy homes once again.

FROM THE FALL 2017 ISSUE

The Just Transition Issue



Don't wait until the last minute, he warned. "Once the road is flooded, you can't get out."

Hurricane Rita flooded the island for weeks, adding insult to injury that had already reduced the tribe's homeland to a sliver of what it once was. Rising sea levels, hurricanes, erosion from oil production, and subsidence have since shriveled the Isle de Jean Charles peninsula from 15,000 acres to a tiny strip a quarter-mile wide by a half-mile long. There were once 63 houses flanking the town's single

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street. Now only 25 homes and a couple fishing camps remain. The rest have washed away or sunk into the Gulf of Mexico, the town emptied and families scattered.

In January, Louisiana received a \$48 million grant from the Department of Housing and Urban Development to move the Biloxi-Chitimacha-Choctaw and Houma Nation tribal members to more solid

ground and reestablish their communities, making tribal members the first climate change refugees in the U.S.

Relocating an entire community is extreme adaptation. Across the country, 24 tribes have responded to climate change with plans for adaptation and mitigation, and more are in development. These efforts are providing roadmaps for other communities across the country.

**Don't wait until the last minute, he warned.**

"We're trying to build out models that could be replicated" based on the best data and science, said Mathew Sanders, resilience policy and program administrator for Louisiana's Office of Community Development, who is coordinating the Isle de Jean Charles Resettlement Project. Community members have chosen three of the 16 sites pinpointed.

As rising temperatures cause heatwaves, droughts, floods, wildfires, and increase the severity of weather events, tribes are on the forefront in respect to both degree of impact and in initial efforts to respond to adaptation, said Ed Knight, director of planning and community development for the Swinomish tribe in Washington state.



The waters around the Swinomish community have provided salmon and shellfish for 10,000 years. But today they pose a great threat to the tribe, much of whose 15-square-mile reservation sits at or near sea level.

Most tribal nations depend heavily on their environment for subsistence as well as cultural identity. On the whole, Native Americans experience poverty at a higher rate than any other group in the country, and are more likely to suffer from health ailments like obesity and diabetes. Some reservations also lack social services and transportation resources. This has made tribal communities particularly vulnerable to the effects of climate change, and adaptation strategies are crucial to building resilience.

Under the leadership of Chairman Brian Cladoosby, the Swinomish Indian Tribal Community on Puget Sound developed the first comprehensive climate change adaption plan in 2010. Today, it's the template for climate resilience planning throughout Indian Country.

**Tribal communities particularly vulnerable to the effects of climate change.**

The azure waters around the Swinomish community are breathtaking, especially at sunrise and sunset, and have provided salmon and shellfish for people there for 10,000 years. But today they pose a great threat to the tribe,

much of whose 15-square-mile reservation sits at or near sea level. The U.S. Geological Survey estimates that sea levels in this region will rise 4 to 8 inches by 2050.

Using climate projections available in 2009, the Swinomish analyzed the highest predicted risks and the tribe's priorities. They categorized the level of risk to infrastructure, human health, and natural resources from low to high, and estimated the time needed to develop strategies for adapting to those impacts.

Using a unique model based on an indigenous worldview, the tribe updated its adaptation strategy in 2014 with environmental, cultural, and human health impact data. It now views health on a familial and community scale, and includes the natural environment and the spiritual realm, said Jamie Donatuto, Swinomish community and environmental health analyst.

The innovative report provides a model for other tribal communities looking to understand how predicted climate changes will affect their people and homelands in practical ways specific to indigenous life. The Swinomish won a national Climate Adaptation Leadership Award for Natural Resources for the report.

### The innovative report provides a model for other tribal communities.

Ann Marie Chischilly (Navajo) is executive director of the Institute for Tribal Environmental Professionals at Northern Arizona University. In the last year, she and co-managers Nikki Cooley (Navajo) and Karen Cozetto led climate resilience trainings in California, Idaho, Alaska, Washington, Wisconsin, Maine, Arizona, New Mexico, and Alabama. With support from ITEP's Tribal Air Monitoring Steering Committee and the EPA, she said, the Tribal Climate Resilience Program has trained more than 300 tribes and 700 people since 2009.

Under the new administration, however, the future is uncertain. In 2016, the Bureau of Indian Affairs became the primary funder of ITEP and other tribal climate projects. After the Trump administration took over, the BIA eliminated the word "climate" from the program—it's now called the Tribal Resilience Program—and deleted all references to climate on its website in June. As the administration turns its focus away from addressing climate change, there is concern that adaptation funding will be cut.

"We continue to hope that all these programs will continue to be funded," Chischilly said. "With 567 tribes [nationwide], the potential lack of funding will vary; some tribes may continue to develop their adaptation plans while others may be forced to stop."

The successful implementation of mitigation measures will depend heavily on the participation of those affected. Chischilly was recently appointed to the National Oceanic and Atmospheric Administration's Advisory Committee for the Sustained National Climate Assessment, where she now provides input on behalf of tribal nations. "Having a seat at the table and being included in future assessments is critical to maintaining a strong voice," she said.

In Louisiana, Chief Naquin was dismayed that others will face situations like his, but efforts being taken there will serve as a model of resiliency for people throughout the world. For the Biloxi-Chitimacha-Choctaw and Houma others, that means providing a way forward for a people who have been torn from their homeland.

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*Terri Hansen wrote this article for Just Transition, the Fall 2017 issue of YES! Magazine. Terri is a member of the Winnebago tribe and has covered Native and indigenous issues since 1993. Her focus is science and the environment. Follow her on Twitter @TerriHansen.*

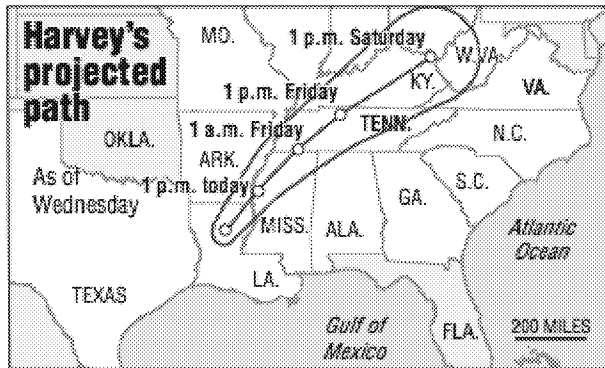
# Harvey jog to largely spare Little Rock; storm's trek now to drench state's southeast

By Kenneth Heard

This article was published today at 4:30 a.m.

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1



SOURCES: Maps4News/HERE, National Hurricane Center

AP

A map showing Harvey's projected path.

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The remnants of Hurricane Harvey, which devastated the Texas Gulf Coast and set record rainfall totals in that state this week, turned northeast Wednesday on a trek that's farther east than first expected.

Central Arkansas, which earlier this week was expected to be in the storm's direct path, will now miss much of the rain forecast to accompany the system, National Weather Service meteorologists said.

Harvey was downgraded Wednesday to a tropical depression with winds of 30-35 mph as it veered northeast through Louisiana. Forecasters now say the center of the storm will travel through western and northern Mississippi, then into the Ohio River Valley early next week.

Still, southeast Arkansas is expected to receive 4-8 inches of rain today and Friday as the remnants clip that corner of the state. Although the system has lost strength, it can still produce bands of rain that will be locally heavy at times.

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"It's going to be dead-eye on top of us," said Chicot County Office of Emergency Management Director Mike Morgan in Lake Village. "One minute we saw Harvey was going west of us, then it was east of us. Now it's right on top of us."

#### ADVERTISING

Morgan said emergency officials are preparing for the worst, gathering sandbags and warning residents of the potential for flash flooding.

The National Weather Service issued a flash-flood watch for Arkansas, Bradley, Cleveland, Desha, Drew, Jefferson, Lincoln and Monroe counties in the state's southeast through this evening. Rainfall totals could reach up to 8 inches in Chicot and Ashley counties, said meteorologist Anna Wolverton of the National Weather Service in Jackson, Miss.

"There is still a lot of circulation with this system," Wolverton said. "The maximum amount of rain will fall along the axis of its path through Mississippi, but Arkansas will see a lot of rain, too."

#### **[STORM TRACKER: Follow Harvey's projected path]**

Forecasters initially expected 4-6 inches of rain and strong winds to reach Little Rock about the time the Arkansas Razorbacks are to kick off their football season with a game tonight against Florida A&M at War Memorial Stadium.

Now, the forecast calls for a quarter-inch to a half-inch of rain today with skies beginning to clear later tonight.

Harvey's path was difficult to track, said meteorologist Michael Brown of the National Weather Service in North Little Rock.

Harvey made landfall as a Category 4 hurricane late Friday with winds of 130 mph near Port O'Connor, Texas, between Corpus Christi and Galveston. The storm moved inland soaking Houston, then ambled back into the Gulf, hugging the coast for several days, hemmed in by ridges of high pressure to the northwest and to the east. The system dumped 51 inches of rain near Houston, setting a record for the most rainfall produced by a storm.

It produced widespread flooding and forced thousands of people to evacuate.

Harvey lingered four days over Texas, wobbling along the coast and refueling with moisture from the warm Gulf waters, then soaked Louisiana's coast.

It finally turned inland again Wednesday when the ridge of high pressure parked over the southeastern United States weakened and created a trough for Harvey to follow north, Brown said.

"It was hard to predict its path when nothing was steering it," he said.

Ashley County Judge Jim Hudson said workers in his area were filling sandbags Wednesday at the county yard in preparation for heavy rain. He said some areas of North Crossett flood when the area receives up to 5 inches of rain.

"We'll probably lose some gravel roads," he said. "Everything is already saturated. "Four to five inches of rain won't devastate us, but we will see some flooding.

"Everybody is on point."

A light mist fell Wednesday afternoon west of Crossett.

Barbara Jones, owner of Jones Wrecking and Body Shop west of Crossett, said one of the rental houses she owns in North Crossett tends to flood in heavy rain.

"I'm hoping we'll be OK," she said.

Her daughter lives in Pascagoula, Miss., where rain from Harvey caused flooding near her home.

"It got to within 4 feet of her home," she said. "I thank the Lord she was OK."

Morgan said emergency workers in Chicot County are ready for the rain. Prisoners from the Arkansas Department of Correction's Delta Unit will help fill sandbags today, and officials will monitor creeks and rivers throughout the county.

The Mississippi River at Greenville, Miss., is expected to rise from 18.8 feet to 22.2 feet Saturday as rain runoff begins to pour into the river. However, the river is considered low right now and should be able to handle much of the storm-water runoff, Morgan said.

Farther east in Mississippi, rivers are expected to fill quickly.

The Big Sunflower River in Sunflower, Miss., is forecast to rise from 0.2 feet Wednesday to 17 feet Saturday, and the Tallahatchie River near Sun Lake, Miss., is forecast to go from 8.4 feet Wednesday to 20 feet Saturday.

"We had 11 inches of rain [all at one time] in 2016, and that was more than our 1,000-year flood plan even called for," Morgan said. "We handled it, and we know what to expect now."